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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/090,145 | 03/05/2002 | Naoyuki Wada | 04329.2757 | 5450 |
| 22852 7590 09/10/2007 FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413 | | | EXAMINER NEWLIN, TIMOTHY R | |
| | | | ART UNIT 2623 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|-------------------------------|-------------------------------|--|
| Office Action Summary | Application No. 10/090,145 | Applicant(s) WADA, NAOYUKI | |
| | Examiner Timothy R. Newlin | Art Unit 2623 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>8/12/2004, 3/5/2002</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1 and 3 are rejected under 35 U.S.C. 102(e) as being anticipated by Burroughs et al., U.S. Pub. No. 2002/0144284.
4. Regarding claim 1, Burroughs discloses a cable modem which can be connected to a head end system and perform a downstream communication for receiving data from the head end system and an upstream communication for transmitting data to the head end system, the cable modem comprising:

a communication unit configured to perform a downstream communication for receiving downstream data from the head end system via a first channel designated by the head end system and an upstream communication for transmitting upstream data to the head end system via a second channel designated by the head end system **[paras. 27-28];**

a time-out detection unit configured to determine whether or not the downstream data is received from the head end system via the first channel within a predetermined period of time **[cable modem determines whether data has been received with a time-out period, para. 32];** and

a time-out notification unit configured to notify the head end system of a detection of time-out when the time-out detection unit does not determine that the downstream data is received from the head end system within the predetermined period of time **[cable modem notifies head end by transmitting parameters required to reestablish downstream communications, para. 29].**

5. Regarding claim 3, Burroughs discloses a cable modem termination system which can be connected to a cable modem and perform a data communication between the cable modem, the cable modem termination system comprising:

a communication unit configured to perform a downstream data communication via a first channel and an upstream data communication via a second channel between the cable modem **[paras. 27-28];** and

a time-out detection unit configured to determine whether or not the upstream data communication from the cable modem is performed within a predetermined period of time **[cable modem determines whether data has been received with a time-out period, para. 32]**.

Claims 6 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Schwartzman et al., U.S. Patent No. 6,385,773.

6. Regarding claim 6, Schwartzman discloses a channel change method in a bi-directional communication system which comprises a head end system and a cable modem connected to the head end system and performs a bi-directional data communication between the head end system and the cable modem, the head end system comprising a first cable modem termination system and a second cable modem termination system, the method comprising:

performing, between the cable modem and the first cable modem termination system, a downstream communication from the first cable modem termination system to the cable modem via a first channel and an upstream communication from the cable modem to the first cable modem termination system via a second channel **[col. 8, 26-49]**;

performing upstream communications from the cable modem to the second cable modem termination system via predetermined candidate channels **[col. 8, 3-36]**;

determining whether or not each of the upstream communications via the predetermined candidate channels is successful **[col. 10, 34-52]**;

measuring a noise in success candidate channels via which the upstream communications are successful **[col. 9, 32-52]**; and

performing an upstream communication between the head end system and the cable modem via one of the success candidate channels in which the noise is smaller than a threshold value **[cols. 9-10, 55-8]**.

7. Regarding claim 8. A channel change method in a bi-directional communication system which comprises a head end system and a cable modem connected to the head end system and performs a bi-directional data communication between the head end system and the cable modem, the head end system comprising a first cable modem termination system and a second cable modem termination system, the method comprising:

performing, between the cable modem and the first cable modem termination system, a downstream communication from the first cable modem termination system to the cable modem via a first channel and an upstream communication from the cable modem to the first cable modem termination system via a second channel **[col. 8, 26-49]**;

performing an upstream communication from the cable modem to the second cable modem termination system via a third channel **[col. 8, 3-36]**;

determining whether or not the upstream communications via the third channels is successful **[col. 10, 34-52]**; and

performing an upstream communication between the head end system and the cable modem via the third channel when it is determined that the upstream communications via the third channels is successful **[cols. 9-10, 55-8]**.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burroughs in view of Schwartzman. Burroughs discloses a time-out detection unit as detailed above in the rejection of claim 1 and 3, but does not include a device to measure noise. However, Schwartzman teaches a cable modem comprising a noise measurement unit configured to measure a noise level on several channels **[cols. 9-10, 53-4; col. 10, 36-52]**. Moreover, Burroughs itself suggests a motivation to combine the references in describing communication between the CMTS and the cable modem. He notes that during a conventional ranging process, the CMTS transmits at a power level that is expected to be acceptable **[para. 34]**. If there is no response, the CMTS may

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then increase transmission power until a response is received **[para. 35]**. It is well-known in the art that determining noise levels (signal-to-noise ratio) on a given channel is a method of determining an acceptable power level. It would have been obvious to one of ordinary skill in the art to modify Burroughs to incorporate a noise measurement unit as taught by Schwartzman, in order to reduce transmission delay and improve quality by proactively determining acceptable power levels, rather than increasing power slowly on a trial-and-error basis.

10. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schwartzman.

11. Regarding claim 5, Schwartzman discloses a channel change method in a bi-directional communication system which comprises a head end system and a cable modem connected to the head end system and performs a bi-directional data communication between the head end system and the cable modem, the head end system comprising a first cable modem termination system and a second cable modem termination system, the method comprising:

performing, between the cable modem and the first cable modem termination system, a downstream communication from the first cable modem termination system to the cable modem via a first channel and an upstream communication from the cable modem to the first cable modem termination system via a second channel **[col. 8, 26-49]**;

determining whether or not each of the downstream communications via the predetermined candidate channels is successful **[col. 10, 34-52]**;

measuring a noise in success candidate channels via which the downstream communications are successful **[col. 9, 32-52]**; and

performing a downstream communication between the head end system and the cable modem via one of the success candidate channels in which the noise is smaller than a threshold value **[cols. 9-10, 55-8]**.

12. Schwartzman focuses on measuring noise in upstream channels, but does state that downstream channels are also used **[col. 8, 43-49]**, and describes direct communication between the CPU and the downstream transmitter **[col. 10, 4-10]**. Thus, it would be obvious to one of ordinary skill in the art to modify Schwartzman to measure noise levels on downstream channels as well as upstream, in order to determine an optimal channel for downstream transmission.

13. Regarding claim 7, Schwartzman discloses a channel change method in a bi-directional communication system which comprises a head end system and a cable modem connected to the head end system and performs a bi-directional data communication between the head end system and the cable modem, the head end system comprising a first cable modem termination system and a second cable modem termination system, the method comprising:

performing, between the cable modem and the first cable modem termination system, a downstream communication from the first cable modem termination system to

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the cable modem via a first channel and an upstream communication from the cable modem to the first cable modem termination system via a second channel **[col. 8, 26-49]**;

determining whether or not the downstream communications via the third channels is successful **[col. 10, 34-52]**; and

performing a downstream communication between the head end system and the cable modem via the third channel when it is determined that the downstream communications via the third channels is successful **[cols. 9-10, 55-8]**.

14. Schwartzman focuses on measuring noise in upstream channels, but does state that downstream channels are also used **[col. 8, 43-49]**, and describes direct communication between the CPU and the downstream transmitter **[col. 10, 4-10]**. Thus, it would be obvious to one of ordinary skill in the art to modify Schwartzman to measure noise levels on downstream channels as well as upstream, in order to determine an optimal channel for downstream transmission.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy R. Newlin whose telephone number is (571) 270-3015. The examiner can normally be reached on M-F 9-6 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on (571) 272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TRN


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